TRANSPORTATION CONSIDERATIONS

Staff Recommendation: Review the existing and projected traffic conditions within the

planning area, understand how traffic has been analyzed, and how the balance between land use and transportation

has been achieved.

The proposed Village Center Scenario best meets levels of service standards compared to the other land use scenarios.

The proposed Plan:

- Recognizes the significant affects of regional traffic generated outside the planning area
- Achieves the least amount of future traffic among the different land use scenarios
- Includes transportation improvements that address the APFO requirements.

Transportation analysis for the Shady Grove Sector Plan considered a range of technical and policy-related variables. The policy context, analysis processes, technical assumptions, and findings are described in the Plan's Appendix. The pertinent elements summarizing transportation capacity are described below.

Current and Forecast Transportation Conditions

The planning area is already positioned as the transportation hub of Montgomery County's I-270 corridor. It is the terminus of the western end of the Metro's Red Line. Existing master plans call for two of the County's most substantial transportation infrastructure projects, the Corridor Cities Transitway and the Intercounty Connector, to serve the Shady Grove area, augmenting accessibility and supporting land use plans throughout the I-270 corridor. See Transportation Network map.

A cordon-line analysis (total number of vehicles traveling into or out of the planning area) of the four land use scenarios indicated that the amount of traffic in the Sector Plan area is forecast to nearly double as land uses in the I-270 corridor approach build-out.

Currently, approximately 38,000 vehicles cross the Sector Plan cordon line during the PM peak hour. In the three future scenarios, approximately 72,000 vehicles are forecast to cross the cordon line during the PM peak hour. The increase in travel demand is due both to increased development in the I-270 corridor as well as assumed increases in roadway capacity within the Sector Plan area. Approximately 11,000 vehicles (or about 15 percent of the cordon line total) are forecast to cross the cordon line at the Upper Rock Creek Master Plan Area boundary via the ICC or Midcounty Highway Extended.

Effect of Local Land Use on Traffic Volumes

The Village Center Scenario provides the lowest total traffic generation, 11 percent less than the existing Sector Plan, and therefore is the most desirable from a transportation perspective. See Source of Cordon Line Traffic in PM Peak Hour.

The differences among the scenarios, however, are not significant enough to require different supporting transportation system recommendations. Regardless of the land use scenario, future development in the planning area contributes only a small portion of the travel demands on the area road system. Additional development in the planning area accounts for only five percent of the total future traffic. See Composition of Village Center Scenario PM Peak Hour Traffic.

The majority of traffic comes from outside the planning area. Existing traffic accounts for 54 percent of the future total (with 21 percent generated by local land uses and 33 percent by through traffic). The growth in through traffic accounts for 41 percent of the total (see Composition of the Village Center Scenario PM Peak Hour Traffic). The amount of through traffic varies depending on the land use scenario. When through traffic is included, the variation in travel time between scenarios is less than two percent. Although the variation is less than two percent, there will be less truck traffic with the Village Center scenario.

Land Use and Transportation Balance

During the past two decades, the plan approval has considered whether or not a plan balances land use and transportation. The definition of balance has generally been that upon implementing the plans recommendations, typically considering a 20-year horizon, the end-state would meet the Adequate Public Facilities Ordinance (APFO) criteria in place at the time of approval.

The master plan approval process has typically relied on a review of the forecast areawide level of service, or Average Congestion Index (ACI), used in Policy Area Transportation Review (PATR) to assess balance. PATR methodology was applied because master plans tend to cover large geographic areas with dispersed land use impacts. In October 2003, the County Council removed the PATR requirement of the APFO beginning with the FY 05 Annual Growth Policy (AGP). However, staff generally finds that the PATR test of ACI remains a valid means of assessing master plan adequacy, even if not applied at time of subdivision.

Sector plans, on the other hand, with relatively small geographic coverage and more fine-grained network, better lend themselves to evaluation of intersection performance.

Recent sector plans have also considered the ACI in the surrounding policy area. For instance, the Bethesda CBD Sector Plan analysis included intersection congestion evaluation plus a PATR review of the Bethesda/Chevy Chase Policy Area. Similarly, the Silver Spring CBD Sector Plan analysis included intersection congestion evaluation plus a PATR review of the Silver Spring/Takoma Park Policy Area. The intent of these PATR reviews was to ensure that the relatively dense development in the sector plans

did not overwhelm the roadway network serving the surrounding, lower density neighborhoods. The other policy areas with sector plans guiding Metro station development are North Bethesda and Kensington/Wheaton.

ACI Standards in CBD Areas

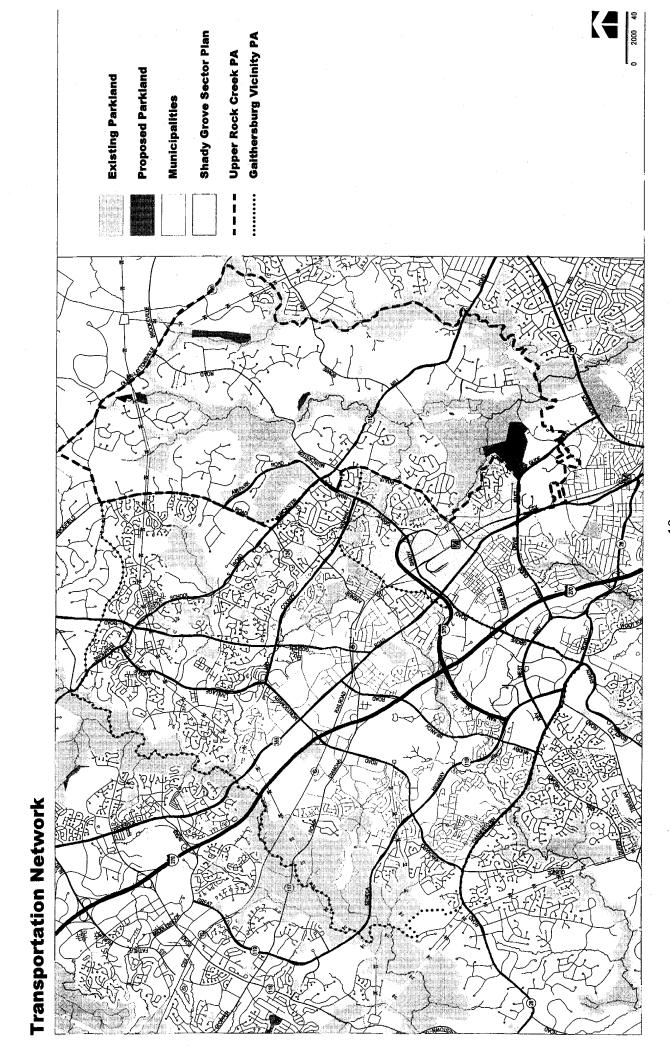
Bethesda/Chevy Chase Policy Area	0.73
Silver Spring/Takoma Park Policy Area	0.93
North Bethesda	0.67
Kensington/Wheaton	0.69

The Shady Grove Sector Plan includes all of the Shady Grove Policy Area and a portion of the Derwood Policy Area. Sector Plan analyses indicate that the 2025 ACI for these two policy areas is forecast to be 0.70. While this ACI is lower than the standards for Silver Spring/Takoma Park and Bethesda/Chevy Chase, it exceeds the current Derwood Policy Area ACI standard of 0.57.

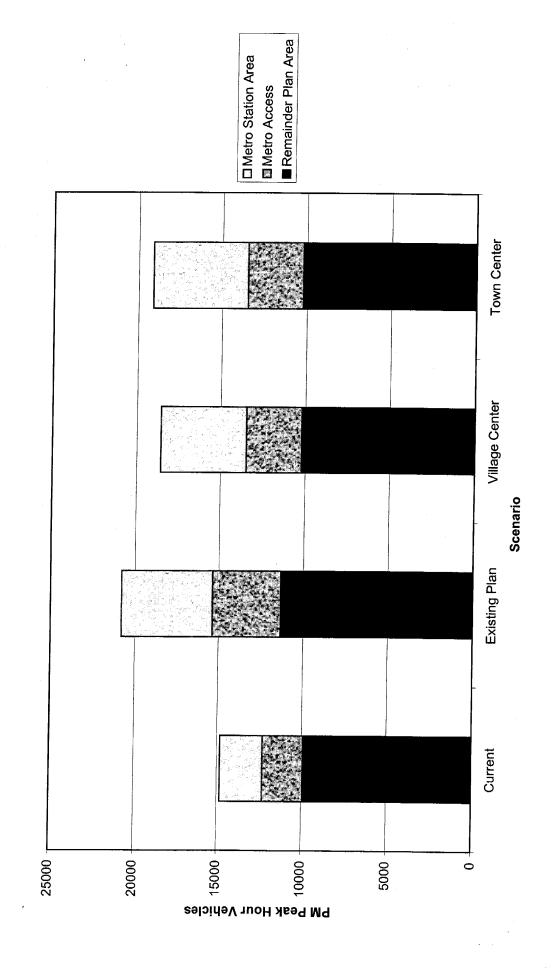
Staff finds that while ACI remains a valuable planning tool, the Derwood Policy Area ACI standard sets an unrealistic expectation for the planning area, for the following reasons:

- The ACI for sector plans at Metro stations range from 0.67 to 0.93
- Trips generated by future development in the Shady Grove planning area comprise only 5 percent of the total future traffic
- Traffic in the Shady Grove Sector Plan area is heavily affected by development plans in Rockville and Gaithersburg, two adjacent municipalities that do not yet have APFOs

In summary, staff finds that the Shady Grove Sector Plan land use and transportation recommendations are adequately balanced because the recommendations satisfy the current APFO, and the Village Center scenario provides a significant amount of housing and minimizes vehicular travel.

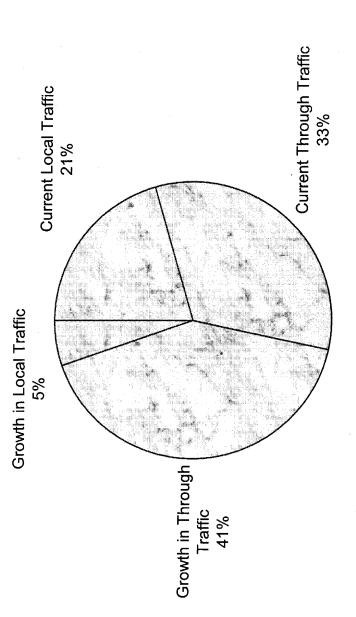


Source of Cordon Line Traffic in PM Peak Hour



tripgen bar chart ver2b.xls

Composition of Village Center Scenario PM Peak Hour Traffic



HOUSING CONSIDERATIONS

Staff Recommendation: Review the need for increasing housing options, expanding

the range of housing types in the larger vicinity around Shady Grove, and increasing the number of transit-oriented

affordable housing units.

The Shady Grove Sector Plan presents an opportunity to provide needed housing.

The proposed Plan:

 Establishes a unique transit-oriented community by increasing the number of new housing units (4,000 units) within the planning area;

 Expands the range of housing types both within the planning area and within the larger vicinity;

Provides new affordable housing units with access to Metro;

Serves as a housing resource to the I-270 Corridor.

The Sector Plan's goal to create a residential community at the Shady Grove Metro station is consistent with County policies to increase housing in the I-270 Corridor and create communities with transit access. The Plan would build a full life-cycle community of housing options for families, public service workers, elderly and special need populations, ownership and rental units with walking access to Metro and with local public facilities and access to facilities and services along the Red Line. The Sector Plan proposes patterns and densities of jobs and housing that create a desirable mixed-use community that is less auto-dependent.

With Metro proximity, the planning area's housing market is particularly strong, as evidenced by the accelerated build-out of King Farm and the 4.8 percent vacancy rate in the Gaithersburg/Germantown rental market. A housing focus group for the Shady Grove Sector Plan reinforced this view and identified specific needs for workforce housing and elderly housing in the area. The Plan's range of unit types, including forsale and rental units, is important to achieving diversity in ownership, income range, and family composition.

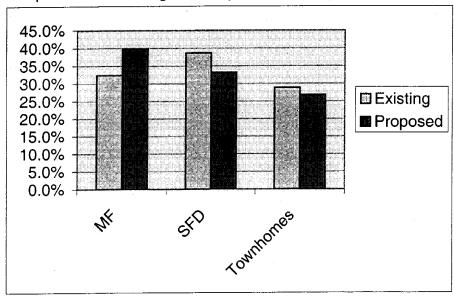
The Plan's proposed housing can help meet the County's housing needs and the mix of unit types can be absorbed into the market.

The planning area's housing profile is predominately single-family detached with townhouses, and a small number of multi-family units (58 percent SFD, 32 percent TH, and 10 percent MF). A look at the planning area and the larger geographic area, including parts of Rockville and Gaithersburg, provides a different picture: 38.7 percent single-family detached units, 28.9 percent townhouse units, and 32.4 percent multi-family units (see Greater Shady Grove Vicinity map). In the larger vicinity, there is an almost equal balance among housing unit types.

The Plan proposes 4,000 new residential units (1 percent SFD, 15 percent TH, and 84 percent MF). The total 4,000 dwelling units at Metro includes the 124 existing dwelling units in Old Derwood; elderly and special need housing that might be provided by Special Exception are not included. This pattern places 4,000 dwelling units within walking distance of the Metro station. The Plan's recommended building heights result in 500 high-rise units (greater than six floors) and 2,870 low rise-units.

The Plan's proposed mix of units is slightly different than the current mix, with none of the changes in housing type greater than 8 percent. Multi-family units will increase from 32.4 percent to 40 percent. Single-family detached units will decrease from 38.7 percent to 33.2 percent.

Comparison of Existing and Proposed Housing Mix in Metro Vicinity



The demand for this amount of low-rise, multi-family housing is strong. According to Rockville planners transit-oriented multi-family units, including MPDUs are being sold before they are built. Also, the 3,200-unit King Farm is being completed and sold within seven years instead of 20 years, as first anticipated in 1997.

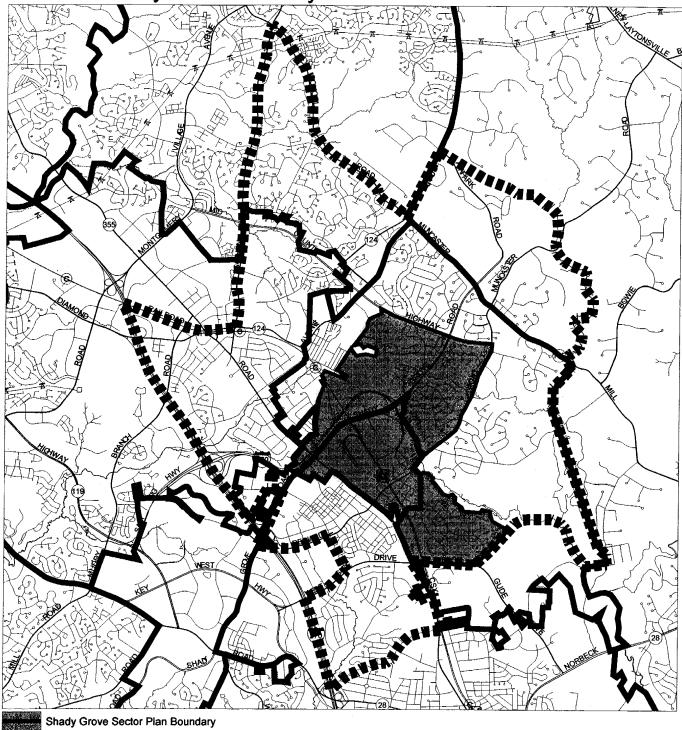
Affordable Housing

The Plan does not set a specific minimum number of affordable units. It assumes that at least a minimum of 12.5 percent MPDUs will be achieved, resulting in a minimum of 500 new MPDUs. This number does include the potential for senior housing or housing provided by Special Exception.

Due to the construction of new residences in the Gaithersburg vicinity since 1976, nearly a quarter of the County's MPDUs (2,262 of over 11,000) have been built in Planning areas 20 and 21. But because MPDUs expire, only 662 price-controlled MPDUs were active as of 2002, which represented only 1.4 percent of the total housing stock (45,840 units in 2002). In 2003, there were 49,488 housing units. The combination of the 662 existing MPDUs and the 500 proposed MPDUs would represent only 2.3 percent of the area's housing stock.

Consideration of any additional new housing density above the Plan's 4,000 dwelling units will result in high-rise, multi-family units due to the constraint of available land for housing. Although the current market could support those units, an increase in high-rise units will create development that is less compatible with existing communities, competes with existing centers at Rockville and Gaithersburg, and further burdens limited public facilities.

Greater Shady Grove Vicinity



■ ■ ■ Greater Shady Grove Vicinity

5280'

Staff Draft - Shady Grove Sector Plan

June 2003

Estimate of Existing Housing Unit Mix in Traffic Zones Surrounding Shady Grove Date of Parcel File Run: January 5, 2004

Date of Parcel File Run: January 5, 2004
Estimate of Existing Housing Unit Mix in Traffic Zones in and around Shady Grove

	Total Units	1,598	437	535	495	1,031	1,378	247	401	1,523	4,727	3,014	473	709	2,644	192	191	729	118	777	830	2	22,051
% Housing	Mix	43.3%	14.0%	29.2%	0.0%	41.1%	23.8%	%0.0	46.9%	21.7%	46.4%	17.3%	17.5%	%0'0	20.3%	4.7%	23.0%	24.3%	27.1%	38.2%	%0'9E	%0'0	28.9%
	Townhouse	692	61	156	0	424	328	0	188	331	2,194	521	83	0	538	6	77	2 21	35	262	583	0	6,374
% Housing	Mix	43.0%	%0'98	%8'02	100.0%	30.9%	2.8%	100.0%	3.7%	62.3%	35.6%	17.8%	41.9%	54.2%	21.0%	95.3%	%0'22	%9.69	25.4%	40.2%	64.0%	100.0%	38.7%
Single- Family	Detached	687	376	379	495	319	38	247	15	949	1,685	289	198	384	554	183	147	464	30	312	531	2	8,532
% Housing		13.7%	%0:0	%0.0	0.0%	27.9%	73.4%	%0'0	49.4%	16.0%	17.9%	64.9%	40.6%	45.8%	58.7%	0.0%	0.0%	12.1%	47.5%	21.6%	%0.0	%0.0	32.4%
	Multi-Family	219	0	0	0	288	1,012	0	198	243	848	1,956	192	325	1,552	0	0	88	56	168	0	0	7,145
	raffic Zone	183	191	192	193	195	196	200	202	203	204	230	231	232	233	234	192	194		201	202	-322	Fotals

For traffic zones 192 and 202, the estimates are for the housing outside the Shady Grove study area. There are no residential uses existing in TZ 197.

Montgomery County Department of Park and Planning, Research and Technology Center

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	Total Units	1598	437	535	495	1031	1378	247	401	1523	4727	3014	473	607	2644	192	191	729	2245	777	066	2	1750	26,088
% Housing	Mix	43.3%	14.0%	29.2%	%0.0	41.1%	23.8%	%0.0	46.9%	21.7%	46.4%	17.3%	17.5%	%0'0	20.3%	4.7%	23.0%	24.3%	27.4%	38.2%	34.4%	%0'0	%0.0	26.8%
	Townhouse	692	61	156	0	424	328	0	188	331	2194	521	83	0	538	9	44	177	615	297	341	0	0	666'9
ousing	Mix	43.0%	86.0%	70.8%	100.0%	30.9%	2.8%	100.0%	3.7%	62.3%	35.6%	17.8%	41.9%	24.2%	21.0%	%6'36	%0'22	%9.69	7:0%	40.2%	%9'39	100.0%	%0'0	33.2%
Single-Family	Detached	289	376	379	495	319	38	247	15	949	1685	537	198	384	554	183	147	464	45	312	649	7	0	8,665
% Housing	Mix	13.7%	%0.0	%0.0	%0.0	27.9%	73.4%	%0.0	49.4%	16.0%	17.9%	64.9%	40.6%	45.8%	58.7%	0.0%	0.0%	12.1%	%9:02	21.6%	%0'0	%0'0	100.0%	4 0.0%
-	Family	219	0	0	0	288	1,012	0	198	243	848	1,956	192	325	1,552	0	0	88	1,585	168	0	0	1,750	10,424
	Traffic Zone Multi-	183	191	192	193	195	196	200	202	203	204	230	231	232	233	234	((eps.(heide))	76)	198	201	202 (inside)	322	197	Totals

For traffic zones 192 and 202, the estimates are given for areas inside and outside the Shady Grove study area. Traffic zone 197 is proposed to have residential uses.

SCHOOL CONSIDERATIONS

Staff Recommendation: Review existing constraints of projected and proposed

student capacity and school needs generated by the

proposed Plan.

New students generated by this Plan's proposals can be partially met in existing schools, but will require new schools within and outside the planning area.

The proposed Plan:

- Requires a new elementary school within the planning area, generating 619 elementary students that cannot be absorbed into existing schools.
- Generates 294 middle school students that can be accommodated in the future King Farm Middle School.
- Contributes to the need for a new high school, generating 263 high school students that cannot be accommodated within existing and projected capacity.

The Shady Grove Sector Plan needs to provide at least one new elementary school within the plan's boundaries if dwelling units stay under 4,000 new units. Over 4,000 will require a large elementary school (750 student-sized). Sufficient middle school capacity exists in the future middle school located at the King Farm. The Plan's proposed 4,000 units contribute to the need for a new high school that will be located outside the planning area.

The three high school clusters that serve the Shady Grove planning area have some capacity, according to MCPS estimates for the FY 05-10 CIP. Estimates indicate that while middle schools have some capacity, both high schools and elementary schools either have no capacity for new students or are close to reaching capacity. Any significant increase in residential units in the planning area will generate demand for more school space.

Based on MCPS student generation estimates, this Plan proposes a new elementary school within the planning area and contributes to the need for a new high school cluster. Middle school students can be accommodated at existing and planned schools.

Projected and Proposed Student Capacity - FY053-10*

(number of students)

Cluster	Elementary Capacity	Middle School	High School
Magruder	+37	+278	-20
Richard Montgomery	-20	+64	+31
Gaithersburg	+34	+187	+43

^{*}Source: Enrollment Projections by Montgomery County Schools, October 2002

Estimated New Student Analysis

Residential density scenarios were evaluated to understand the student yields for each. The range of densities included a low of 2,700 units in which the County Service Park is not relocated, to a high of 5,000 units and a relocated the County Service Park to accommodate residential neighborhoods and public facilities. Because student generation is affected not only by the number of dwelling units but the type of unit, the mix of unit types for each scenario changed to reflect urban design analysis and distribution decisions. More high-rise units yield fewer students than a scenario with lower density, single-family units.

Analysis shows that all scenarios except for build-out of the existing Sector Plan will require a new elementary school and contribute to the need for a new high school, generating some fraction of the total need. Students generated by the build-out of the existing Sector Plan can be absorbed into existing middle and high schools and with classroom expansions at the elementary schools. The schools required for each scenario follow.

Existing Sector Plan
Recommended Village Scenario
Metro Core Scenario
Town Center Scenario

No new schools, additional elementary classrooms 1 new elementary school, .16 new high school 0.25 of an elementary school, .10 new high school 1 large elementary school, .20 new high school

Projected School Population Tables for Alternative Development Scenarios

Existing Sector Plan - +1200 units

Existing Oc				T	T	
Unit	% Units	# Units	Elementary	Middle	High	Total
types					School	
HR			<u>,</u>			
MF	93%	1120	162	85	69	316
SFA/TH	7%	80	20	8	9	37
SFD						
Total	100	1200	182	93	78	353

Recommended Village Scenario - +4,000units

Lecomme	nucu villagi	C Coomano	1 1,000 arrito			
Unit	% Units	# Units	Elementary	Middle	High	Total
types					School	
HR	13	500	34	12	9	55
MF	71	2870	416	218	178	812
SFA/TH	15	615	154	59	71	284
SFD	1	15	15	5	5	25
Total	100	4000	619	294	263	1176

Metro Core Scenario – + 2700 units (County Service Park remains)

Unit	% Units	# Units	Elementary	Middle	High	Total
types					School	
HR	18	500	34	12	9	55
MF	76	2060	399	156	128	583
SFA/TH	5	125	31	12	14	57
SFD	1	15	5	2	2	9
Total	100	2700	369	182	153	704

Town Center Scenario - 5 000 units

TOWIT COLL	ter occitati	0,000 ui	110			
Unit	% Units	# Units	Elementary	Middle	High	Total
types					School	
HR	25	1230	82	28	21	131
MF	64	3197	464	243	198	905
SFA/TH	10	558	140	53	64	257
SFD	1	15	5	2	2	9
Total	100	5000	691	326	285	1302

^{*}Student generation rates are based on countywide standards.

The Town Center Scenario's 5,000 dwelling units result in 691 elementary students. This will require a large elementary school that exceeds the standard 650-student sized elementary school. The Plan accommodates the Town Center Scenario.

Elementary School Site Options

M-NCPPC and MCPS planners evaluated sites within the planning area for an elementary school, with the understanding that in all scenarios, a new high school will need to be accommodated outside the planning area, probably within the Gaithersburg Vicinity planning area. Feasible sites have been identified but will be formally designated in that plan. All elementary sites in the Shady Grove planning area can accommodate a standard sized elementary school (650 student-sized, 10-12 acres) (see Elementary School Site Options).

The Casey at Mill Creek site offers the best option for locating an elementary school within the existing community. However, it will require acquisition funding. The other optional sites have problems with access, community opposition, or are compromised by heavy traffic near Metro. The second option, if one needs to be considered, should be the MCPS site within the proposed Jeremiah Park in lieu of the library. The Blueberry Hill option is not recommended due to access concerns and the deficit of recreation parks in the planning area.

Casey at Mill Creek (Oxbridge development) – 9 acres

This site is located between two stream valleys and will require adjusting the building program and mitigating environmental impacts. The developer has agreed to provide a reservation for future acquisition by MCPS. Dedication is not possible because development on that site does not generate enough students on its own, and the site is not designated in the 1985 Master Plan. Acquisition cost is a significant factor. The site is adjacent to the existing single-family communities of Mill Creek and the Town of Washington Grove. Access is excellent via Amity Drive and Crabbs Branch Way extended. Some grading encroachment into the stream valley buffers may result but can be offset by increased on-site reforestation.

Blueberry Hill Park - 10 acres

This site is the wooded half of the existing local park and is owned by the M-NCPPC. It was set aside in the 1977 Master Plan as a school site. The 1985 Master Plan dropped a number of surplus school sites and recommended that Blueberry Hill should be used solely for recreation. This site has not been formally deemed surplus. The community has expressed strong opinions that this site continues as a park, citing a lack of adequate recreation space in their community. Vehicular access to the site is limited to Redland Road, a heavily congested roadway that may pose safety concerns.

MCPS Bus Depot at the County Service Park - 10 acres

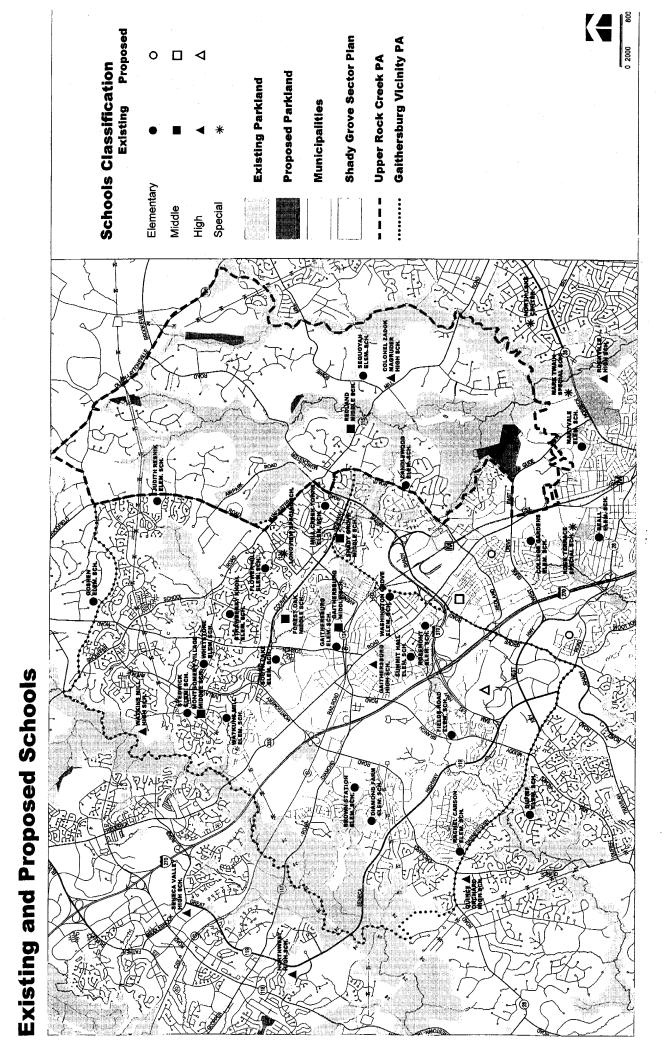
In scenarios that relocate the County Service Park, ten acres would be available for an elementary school in the proposed Jeremiah Park neighborhood. In lieu of providing a library, as recommended in the Plan, an elementary school could be provided adjacent to the proposed ten-acre park. Access is excellent via Crabbs Branch Way. Students from the new Metro Neighborhoods could walk to school. However, this is a congested traffic area and safety is a concern. Also, it is preferable to locate a library near Metro rather than an elementary school.

Casey 6 – 25 acres

This I-1 site is located just north of I-370, adjacent to the CSX rail line and Robert's Oxygen. A stream valley bisects the site and only the northern portion is viewed as viable for development. Access to the site is excellent via Crabbs Branch Way extended and the proposed connection to Amity Drive. However, the site lies within the industrial area and does not directly abut any residential land. It is isolated from the community it is intended to serve.

Emory Grove Lane - 11.5 acres

This surplus school site is located along Midcounty Highway, outside the planning area. Although it is an available site, it is too far away to serve the proposed Metro Neighborhood communities. It should be considered as an available school site for the Gaithersburg Vicinity Master Plan.



PARK, RECREATION, AND TRAILS CONSIDERATIONS

Staff Recommendation: Review the existing recreation deficit in the Gaithersburg

Area, and the need to increase recreation facilities within the planning area to serve the proposed increase in

development.

The Plan's proposals increase recreation facilities but still do not satisfy demand, given the proposed increase in residential units.

The proposed Plan:

- Incorporates new parks and recreation facilities into redevelopment proposals to serve existing and new communities.
- Creates a connected trail system that improves access to Metro and other recreational destinations.

The Plan recommends a new park and an elementary school that can provide eight or nine new ballfields, two to three basketball courts, and three playgrounds. Under the County's Park, Recreation and Open Space (PROS) Plan recommendations, there will still be a remaining unmet need for three to four ballfields, two basketball courts, and eight playgrounds. The proposed Metro Neighborhoods increase the need for more recreation beyond that accounted for in the PROS Plan. Increasing the proposed residential units above the new 4,000 will continue to increase demand that cannot be met within the planning area.

The 1998 PROS Plan indicates a significant deficit of ball fields, basketball courts, and playgrounds in the planning area.

Park needs are determined in the PROS Plan, which relies on user surveys and demographic forecasting to estimate future community and regional parks needs. These recreational needs are addressed in a policy context that promotes provision of recreational facilities along with preserving environmental character and historic resources.

The Village Center land use scenario creates a new community, built in an urban pattern, around the Metro station. The park needs of this new community have not been included in the current PROS Plan, since the previous master plan did not view this as a residential area. Nonetheless, the PROS Plan's surveys and listing of needs can be applied to the Shady Grove planning area.

The PROS Plan uses information from several different surveys including the 2000 Park User Survey and the 2003 Park User Satisfaction Survey. Recent survey findings relevant to Shady Grove found that:

- Local parks have shown the greatest increase in use since 1990, with demand particularly for ballfields, basketball courts, and playgrounds
- Both residents and employees use urban parks

- Walking, hiking, and nature walks are the most common recreational activities
- Students perceived the highest shortages in hiker-biker trails.

In the current PROS Plan, the Shady Grove planning area is in the Gaithersburg Area, but is also served by parks in the adjacent Upper Rock Creek planning area as well as the City of Rockville. Derwood residents use public facilities in those areas as well as in the City of Gaithersburg.

Although there are a variety of existing parks in and near the planning area, the existing facilities do not meet the current recreation needs. The PROS Plan (p.86) indicates a deficit of 12 ballfields, five basketball courts, and 11 playgrounds in the Gaithersburg Area, which includes the planning area. Additional residential density will generate additional demand and increase the deficit of facilities in the area.

The Shady Grove area is currently served by two local parks: Redland Road and Blueberry Hill, and by several nearby regional parks: Upper Rock Creek and the future recreational park at Laytonia. These parks provide a range of recreation opportunities including sports, nature appreciation, jogging, and playgrounds. Redland Road and Blueberry Hill each have a soccer field, tennis and basketball courts, and a playground. Blueberry Hill also has a softball field. The future park at Laytonia will be a baseball/softball complex with a roller hockey court.

On the basis of the PROS Plan, there is a need to increase the number of ballfields in the area, add playgrounds and expand basketball opportunities, increase opportunities for passive recreation areas, and improve access to recreation areas.